

Remarks

Claims 2-3 are currently pending in this application. Claim 1 has been cancelled.

Applicants respectfully request that the amendments be entered in the claims at this time since they overcome the Examiner's objection to the claims which was raised for the first time in the Final Rejection. Applicants respectfully submit that the amendments are supported in the specification at page 20, lines 20-27, and at page 33, lines 1-4.

Applicants respectfully request that the amendments be entered at this time since they place the application in condition for allowance or substantially reduce the issues for appeal.

Rejections Under 35 U.S.C. 132(a)

At page 2, paragraph 1, the Examiner states:

"The amendment filed 07/18/2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material, which is not supported by the original disclosure, is as follows:

(i) claim 2 now states, " wherein the metalworking lubricant composition has reduced foaming properties in aqueous and nonaqueous metalworking formulations," which is not supported by the specification when relating to the metal working lubricant composition."

Applicants respectfully request that the Examiner reconsider and withdraw the rejection.

As presently claimed, claim 2 is directed to a metalworking lubricant composition comprising A) at least one lubricating oil; and B) at least one base-catalyzed branch reaction product. At page 5, lines 14-20, the specification teaches:

"The presence of component B) in the metalworking lubricant compositions of the invention enhances the wettability of the lubricant and helps disperse metal fines. In addition, the lubricating and defoaming

properties of the compositions are improved as well as their extreme pressure properties. The composition provides excellent wetting properties under dynamic and high shear applications without creating foam. Also, very consistent performance is obtained under a wide range of metal processing conditions."

In addition, at page 17, lines 16-19, the specification teaches:

"The branched reaction products (component B) used in the compositions of the invention are low-foaming surfactants, which can be used as the only surfactant in the composition, or as a defoaming agent and/or surfactant in conjunction with other surfactants."

In addition, at page 19, the specification teaches that the metalworking composition of the invention can optionally contain one or more of the following additives: ". . . H) a solvent, generally water."

In addition, Applicants invite the Examiner's attention to the examples of the metalworking compositions beginning at page 23, line 5, and extending through page 24, table 1 and lines 1-13. Table 1 under the heading "Raw Material," Example 1 Reaction Product, indicates that the product is a wetting agent, defoaming agent, dispersing agent, lubricant enhancer, extreme pressure agent. In addition, the last 3 lines of page 24 of the specification teach "the above metalworking fluid concentrates can be mixed with water to form a metalworking lubricant composition for use in working of metals, e.g. a 3% solution in water." Applicants respectfully submit that the material at page 5, page 17, pages 23 and 24 fully supports a composition with reduced foaming properties in aqueous and nonaqueous metal-forming lubricating formulations. Applicants therefore respectfully request that the Examiner reconsider and withdraw the rejection.

In relation to claim 3, the Examiner states:

""wherein the base-catalyzed reaction product is not epoxy functional " and provides "reduced foaming". It is the Examiner's position that although Example 3 of the instant specification discloses where the reaction was completed until no epoxide was left, this reaction is only conducted using one specific embodiment of the claimed formula (II).

Furthermore, the specification also discloses in Example 1 another variation of formula (II) wherein the reaction was not completed until no epoxide was left. Therefore, since the variation disclosing no epoxy functional groups is more specific than the instantly claimed formula (II) and this limitation is only claimed using one specific embodiment, it is the examiner's position that the instant specification does not support the claim. Additionally, the instant specification does not support the limitation of "reduced foaming" of the reaction product of formulas (I) and (II) in regards to the electroplating composition."

Applicants respectfully submit that the limitations are fully supported in the specification and claims as originally filed and no new matter has been entered by way of amendment to the claims.

As presently claimed, B) is at least one base-catalyzed branched reaction product comprising the following reactants: a) at least one, of formula (I) which is $R^1(X)_3$ wherein each X group can be a halogen atom or one X group is a halogen atom and two X groups represent an epoxy oxygen atom, which is attached to two adjacent carbon atoms in the R^1 group to form an epoxy group, and R^1 is an alkanetriyl group containing from 3 to 10 carbon atoms. The reactant a) is then reacted with a second reactant b) which is at least one compound of the formula $R^2 X(AO)_n Y$. The Y group is hydrogen, or Y can be a mercapto group or an amino group or C_1 - C_6 alkyl amino group in place of a terminal -OH- group.

Applicants respectfully submit that when $R^1(X)_3$ is a compound in which each X group is a halogen atom and is reacted with b), Applicants see no possibility that the reaction product could have free epoxy groups since there are no epoxy groups in the initial reactants. In addition, Example 3 at page 36 clearly shows the reaction product of an epoxy-containing compound with an octyl alcohol which was reacted until the epoxy titration showed no epoxide left. In addition, Example 1 was operated under the same conditions as Example 3 with the same reaction times and temperature and one skilled in the art would expect to have a substantially similar reaction product. However, since it is not possible to have an epoxy group formed when $R^1(X)_3$ is a tri-

halogen substituted group and Example 3 clearly shows reaction until there was no epoxy group left in the reaction product, Applicants respectfully submit that an epoxy group free composition is fully supported in the specification as originally filed.

Applicants respectfully submit that one skilled in the art could form a reaction product (B) by reacting a) epihalohydrin with b) for an insufficient length of time so that the composition could have unreacted epoxy groups. However, it would be very easy to determine whether the composition fell within the present invention by merely testing for the presence of the unreacted epoxy groups. Applicants therefore respectfully submit the term "not epoxy functional" is fully supported in the specification in that half of the starting materials could not possibly form a material having free epoxy groups and one of two examples shows reacting an epoxy group containing material with b) to form a composition with no free epoxy groups.

Applicants also invite the Examiner's attention to page 35, lines 1-4, which shows in the general instructions that the reaction is continued until the reaction is completed. As one skilled in the art would understand, the reaction between a) and b) involves both the halogen substituent and the epoxide group. The reaction could only be completed when the halogen groups and as many of the epoxide groups if present, have been reacted in accordance with the known chemical equilibrium standards.

The Examiner states that this limitation is only claimed based on one specific embodiment, it is the Examiner's position that the instant specification does not support the claim. As set out above, the Examiner fails to consider the reaction between $R^1(X)_3$ when X is halide atoms and no epoxy groups are present. Applicants submit that clearly, one skilled in the art would not expect the reaction product to contain unreacted epoxy groups. Applicants submit that the reaction product obtained when $R^1(X)_3$ are all halide atoms, would encompass about 50% of the possible reaction products formed between a) and b) even if the reaction was not carried out to completion. Applicants therefore respectfully submit that the Examiner's objection is untenable in view of the fact that certain reaction products have no possibility of having epoxy groups and the

specification teaches that when epoxy groups are present in reactant a), a) and b) are reacted until the epoxy groups are not detected in the reaction product. Applicants submit that when the reaction was carried out, until it was completed, there would be no free epoxy groups. Applicants respectfully submit that the Examiner's rejection on lack of support for the epoxy-free limitation is untenable and respectfully request that the rejection be reconsidered and withdrawn.

The Examiner at the top of page 3 indicates:

"furthermore, the specification also discloses in Example 1 another variation of formula (II) wherein the reaction was not completed until no epoxide was left."

Applicants respectfully request that the Examiner please point out to Applicant where in the specification the statement that "the reaction was not completed until no epoxide was left". Applicants have thoroughly perused the specification and can find no statement. Applicants submit that the Examiner's position is based on speculation and conjecture which is not the grounds for a rejection under 35 U.S.C. 132(a).

At page 3, the Examiner states:

"Additionally, the instant specification does not support the limitation of "reduced foaming" of the reaction product of formulas (I) and (II) in regards to the electroplating composition."

Applicants respectfully request that the Examiner reconsider and withdraw the rejection in view of the teachings of the specification.

Applicants invite the Examiner's attention to page 6, lines 20-21, which is directed to the electroplating or electrowinning process and states:

"Component B) is a low foaming surfactant and is quite stable in both aqueous acidic and alkaline solutions."

In addition, at page 26, lines 5-8, the specification teaches:

"The branched reaction products (component B) used in the aqueous compositions of the invention are low foaming surfactants, which can be used as the only surfactant in the aqueous compositions, or as a

defoaming agent and surfactant in conjunction with other surfactants."

This statement appears in the specification and relates to a composition for electroplating and electrowinning. Applicants therefore respectfully submit that the limitation of "reduced foaming" is fully supported in the specification in regard to electroplating compositions.

Applicants respectfully submit that the rejections under 35 U.S.C. 132(a) are untenable and respectfully request that the rejections be reconsidered and withdrawn.

REJECTIONS UNDER 35 U.S.C. 112

Claim 3 is rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claim 3 recites the limitation "wherein the base-catalyzed reaction product is not epoxy functional". Attention is drawn to formula (II), which represents the base-catalyzed reaction product having the formula $R^2X(AO)_nY$, wherein R^2 is a substituted or unsubstituted organic group."

Applicants respectfully request that the Examiner reconsider the rejection. Formula (II) does not represent the base-catalyzed reaction product having the formula $R^2X(AO)_nY$. Formula (II) is directed to the composition of reactant b). Applicants respectfully submit that this is clear in the specification and the claims that (II) is one of the reactants which is reacted with (I) to form the reaction product.

The Examiner then states:

"It is the Examiner's position that the recitation of "substituted organic group" is so broad that it clearly encompasses, for instance a hydroxyl group containing organic moiety. Hence, formula (II) clearly encompasses a polyhydric alcohol. It appears that Applicant is arguing that in order for the reaction product to not be epoxy functional, the formula (II) must represent a monohydric alcohol (page 15, line 21, through page 16, line 3 of amendment filed 04/12/2006). As explained above, that is incorrect. Therefore this new limitation of epoxy functional group conflicts with the

scope of formula (II) and renders the claim indefinite."

As pointed out above, the Examiner is misinterpreting the nature of formula (II) and its function in the claims. As fully set out in the claims, (II) is one of the reactants which reacts to form the reactant product B). The compound (II) does not contain any epoxide groups and any substituents on R² are fully set out in the claims and the specification as originally filed. Applicants therefore respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. 112, second paragraph in view of the above discussion and the amendments to the claims. Favorable consideration of the claims in their amended form is respectfully requested.

Claim 2 stands rejected under 35 U.S.C. 102(b) as anticipated by Wiggins (US 6,387,962). Applicants respectfully submit that Wiggins neither teaches nor suggests the present invention.

Wiggins is directed to an anti-foaming agent similar to the anti-foaming agent of the present invention. The anti-foaming agent is useful as an anti-foaming agent in paint formulations. There is neither teaching nor suggestion that the composition would be useful as an anti-foaming agent in a metalworking lubricant.

Wiggins et al. discloses that the reaction product of the invention is most effective when the reaction product is mixed with any water insoluble liquid that will dissolve and/or disperse one or more reaction products according to the invention. Wiggins teaches an extremely broad range of useful carriers in that they only are required to solubilize or disperse the reaction product and be insoluble in water. Applicants submit that this definition would cover a very broad range of materials, most of which would not be lubricants.

Applicants respectfully submit that to be a reference on which a rejection under 35 U.S.C. 102(b) can be based, the reference must disclose with certainty the present invention. Since one skilled in the art would readily understand that all water-insoluble liquids which would dissolve the reaction product would not be metalworking lubricants, Applicants respectfully submit that Wiggins et al. does not anticipate the present

invention. Wiggins et al. fails as a reference since there is neither teaching nor suggestion of anti-foam activity with a metalworking lubricant in an aqueous or a nonaqueous system. Applicants therefore respectfully submit that a rejection under 35 U.S.C.102(b) over Wiggins et al. is untenable and Applicants respectfully request that the rejection be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 102(b) as anticipated by Kaylo (U.S. 6,290,830). Applicants respectfully submit that Kaylo neither teaches nor suggests the present invention.

Claim 3 is directed to an aqueous electroplating composition comprising at least one metalloid and the base-catalyzed reaction product of the invention. The base-catalyzed reaction product is not epoxy functional. The reaction product of the invention is utilized in the electroplating bath as an anti-foam or foam-reducing agent. As would be well understood by one skilled in the art, an electroplating bath would contain metal salts and the like.

In contrast to the present invention, Kaylo discloses a method and composition for electrodeposition of a resin coating on an electroconductive surface. The resin composition must contain epoxy, oxirane or other cross-linkable groups in a molecule which are polymerized and cross-linked after the resin coating has been deposited on the metal surface. In addition, the resin electrodeposition coating bath must be substantially free from metal ions which are detrimental to the electrodeposition process.

The resin useful in Kaylo is epoxy functional and can comprise the reaction product of an epihalohydrin with a polyhydric alcohol. The reaction product must contain unreacted epoxide groups when the resin is an epoxy resin to permit the material to further polymerize and cross-link after the resin has been electrodeposited on the conducting surface.

Applicants respectfully submit that Kaylo does not teach or suggest the present invention and a rejection under 35 U.S.C. 102(b) over Kaylo is untenable.

In contrast to the electroplating bath of the present invention which by its very definition must contain metal ions, and the fact that the antifoam agent in the electroplating bath is not epoxy functional, Applicants respectfully submit that Kaylo would neither teach nor suggest the present invention.

Applicants further submit that the Kaylo reaction product is present in the electrodeposition bath in substantial amounts and is the main component (50% or more). There is neither teaching nor suggestion that the electrodepositable resin composition is an antifoam agent. Since Kaylo requires a metal ion free composition and does not contain an epoxy free reaction product of an epichlorohydrant with an alkoxyated alcohol, Applicants respectfully submit that Kaylo is not pertinent and neither teaches nor suggests the present invention.

Applicants submit that it is clear that Kaylo does not disclose an electroplating composition as defined in the present application. Kaylo is directed to depositing a curable epoxy functional resin on the surface of an electroconductive substrate utilizing an electrodeposition bath which does not contain metallic ions. Applicants submit that the very nature of an electroplating bath requires metal ions to provide the electroplating on the surface of the substrate being plated. In fact, Kaylo does not utilize the term "electroplating bath" but utilizes the term "electrodeposition" to refer to the deposition of a resin coating on an electroconductive substrate.

As is well known in the art, an electroplating bath is utilized to transfer metal ions to a surface of an electroconductive substrate. The metal ions are plated out on the surface of the substrate receiving the electroplated coating. By necessity, the electroplating bath must contain ions of the metal to be functional. For the above reasons, Applicants respectfully submit that a rejection of claim 3 under 35 U.S.C. 102(b) over Kaylo is untenable and Applicants respectfully request that the rejection be reconsidered and withdrawn.

Claim 2 stands rejected under 35 U.S.C. 103(a) as unpatentable over Larsen (U.S. 2,375,007) in view of Dones (U.S. 6,540,942). Applicants respectfully submit that

Larsen and Dones, whether considered alone or in combination neither teach nor suggest the present invention.

Larsen discloses the use of certain silicone and organic silicate oligomers as anti-foaming agents for reducing the foaming tendency of oils and particularly oils used in non-aqueous aircraft or other fueled engines and in semi-refined hydrocarbon compositions. The disclosure is specific to the particular classes of silicones and silicates described. The specification teaches at page 2, right-hand column at lines 54-59 that other silicone compounds having different structures are not useful as the anti-foaming or foam depressing agents. Even the class of compounds which has been defined as useful anti-foaming agents for non-aqueous liquid hydrocarbon materials, can have different degrees of effectiveness depending upon the molecular weight of the oligomers utilized.

Applicants submit that the anti-foaming agent useful in the practice of the present invention is a surfactant material. Larsen discloses at page 1, right-hand column, lines 15-50 that detergents are generally considered as foaming agents rather than foam-reducing compositions in lubricating oil formulations. Applicants respectfully submit that the discovery that the surfactant components useful in the practice of the present invention are foam-reducing compositions in both non-aqueous lubricating oils and in aqueous dispersions of oils is unexpected in view of the teachings of Larsen. Applicants submit that Larsen would teach one skilled in the art away from including a surfactant in a lubricating oil and especially as an antifoam agent.

The deficiencies in Larsen are not cured by combination with Dones. Dones discloses a polymerizable, non-aqueous coating composition containing the reaction product of epichlorohydrin and an alkoxyated alcohol as a reduced foaming composition. However, the hard coating polymerizable composition containing the reaction product of epichlorohydrin and an alkoxyated alcohol is not a lubricating composition and one skilled in the art would expect that the composition has substantially different properties from a lubricating oil. None of the additional possible

components in which the defoaming agent is effective is a lubricating oil. Applicants respectfully submit that there would be no teaching nor suggestion that the Dones' defoaming agent would have any utility in the lubricating oil composition disclosed in Larsen. The polymerizable hard coating composition disclosed in Dones is not a lubricating oil composition and has substantially different properties from such a lubricating composition.

To be a proper rejection under 35 U.S.C. 103(a), there must be some teaching or suggestion in the combination of references to make the combination. In the present rejection, the Examiner is utilizing hindsight reconstruction of the invention utilizing the present application as an incentive for combining these references. Applicants submit that since there is neither teaching nor suggestion in either reference and no assurance that the inclusion of the reaction product of epichlorohydrin with an alkoxyated alcohol would have any utility in a lubricating oil composition which can be aqueous or non-aqueous and the teaching of Larsen that surfactants cause foaming in lubricating oil formulations. Applicants respectfully submit that the rejection is improper and request that it be reconsidered and withdrawn.

Larsen is directed to the art of lubricating oil compositions utilizing a defoaming agent comprising various silicon-containing oligomers. However, the specification clearly teaches that all silicon-containing compounds are not useful anti-foaming agents in the oil compositions.

In addition, Larsen teaches that surfactants cause foaming in lubricating oil compositions and require the addition of the silicon oligomers to overcome the foaming attributed to the presence of detergents in the oil formulation. Applicants submit that the teachings of Larsen would dictate against including a surfactant composition of Dones as an anti-foaming agent in an oil composition. Although Dones discloses that the surfactant is useful for inhibiting the foam in a non-aqueous polymerizable resin composition, these materials are substantially different from the lubricating oil compositions which are the subject matter of claim 2 in the present application. Applicants

respectfully submit that the combination of Larsen with Dones neither teaches nor suggests the present invention nor would assure anyone skilled in the art reasonable success in foam suppression of an aqueous or non-aqueous lubricating oil formulation by including in a metal working lubricating oil the reaction product of epichlorohydrin with an alkoxylated alcohol. Applicants therefore respectfully request that the rejection be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103(a) as unpatentable over Kaylo (U.S. 6,290,830) in view of Dones (U.S. 6,540,942). Applicants respectfully submit that Kaylo and Dones, whether considered alone or in combination, neither teach nor suggest the present invention. Kaylo discloses an electrodeposition process utilizing an aqueous dispersion of an electrodepositable polymerizable resin coating composition and an aqueous rinsing system for treating the electrocoated substrates. The invention upon which the Kaylo reference is based is that use of certain halonitroalkanes can have an antimicrobial effect on the electrodepositable aqueous composition and, in addition, provide a smooth electrodeposited polymerizable coating on the substrate being coated.

There is no mention in Kaylo et al. of any foaming problems which need to be overcome by the addition of an antifoaming agent to the electrodeposition bath. The only concern with foaming is the presence of metal ions in the aqueous suspension which can cause coating defects such as gas generation at the cathode where the electrode depositable coating is being formed (column 2, lines 8-10). Applicants therefore respectfully submit that Kaylo would teach one skilled in the art away from including an antifoaming or foam depressing agent in the electrodeposition bath containing a polymerizable epoxy functional resin.

The deficiencies in the teachings of Kaylo in regard to foaming in the electrodeposition bath or any advantage in including a foam suppressing or foam eliminating agent in the bath are not cured by combination with Dones. Dones is directed to a non-aqueous hard coating composition. The hard coating composition

disclosed in Dones are compositions which provide hard coatings when cured and, in particular coatings which can be cured by ultraviolet radiation or by electron beam radiation. One of the coating compositions useful in the practice of the Dones' invention can include epoxy resin compositions which are thermosetting resins based on the reactivity of the epoxide group (column 3, lines 53-64). However, the reaction product of epichlorohydrin with an alkoxyated alcohol useful in the practice of the present invention does not contain reactive epoxy groups to form a durable resin coating. Applicants respectfully submit that there would be no incentive to include an antifoaming agent in the Kaylo composition since there is no mention of a foaming problem in the electrodepositable coating bath disclosed in Kaylo. In addition, electrodeposition coating baths are sensitive compositions and one skilled in the art would not consider any additives which were not absolutely essential to operation of the bath.

In addition, there is neither teaching nor suggestion in Dones that the addition of the reaction product, useful in non-aqueous compositions, to the aqueous electrodepositable coating composition of Kaylo would provide any benefit in regard to foam control of the composition.

Applicants submit that the reactive coating composition disclosed in Kaylo is far different from the reaction product useful in the practice of the present invention. As presently claimed, the reaction product of the present invention is substantially epoxy free as shown in the examples wherein the reaction is carried out until an analysis of the reaction product shows that all of the epoxide groups have been reacted or a non-epoxide group containing reactant is employed. However, if the Examiner believes that the electrodepositable resin of Kaylo is the same as the reaction product of the invention and the Kaylo electrodeposition baths contain at least 50% by weight of the resin, Applicants submit that there would be no need to add the reaction product of the present invention to the Kaylo composition.

Since the compositions and the environment for use of the composition as

disclosed in Kaylo and Dones are different and non-related, Applicants respectfully submit that there would be no suggestion to combine the teachings of Dones with the teachings of Kaylo to arrive at the present invention. This is particularly true in view of the fact that the Kaylo composition cannot tolerate the presence of metal ions. Applicants therefore respectfully submit that a rejection of claim 3 under 35 U.S.C. 103(a) over the combination of Kaylo with Dones is untenable and Applicants respectfully request that the rejection be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C.103(a) as unpatentable over Kaylo in view of Dones and further in view of Deresh (U.S. 4,849,059). Applicants respectfully submit that Kaylo, Dones and Deresh, whether considered alone or in combination, neither teach nor suggest the present invention

The deficiencies in the combination of Kaylo with Dones has been discussed in great detail above. The deficiencies in the combination of Kaylo with Dones is not cured by combination with Deresh.

Deresh discloses a particular tin, lead or tin-lead tall oil electroplating baths which produce little or no foam during electroplating. The bath is limited to use of tin and/or lead salts of alkane sulfonic acids, free alkane sulfonic acids, brightening agents and a defoaming agent. The defoaming agent is a critical composition comprising at least 5 components. A defoaming agent useful in the Deresh electroplating baths comprises a silicon and silica and/or silicate in polypropylene glycol, a first nonionic surfactant consisting of an ethoxylated arylphenol and a second non-ionic surfactant consisting of an ethoxylated short-chain alcohol. As set forth in the specification, the combination of the particular defoaming agent and the particular nonionic surfactants appear to be unique in producing tin and/or lead electroplating baths based on an alkane sulfonic acid electrolyte which can be operated at high speed plating conditions with little or no foam formation and without oiling out of the defoaming agent in the form of a film along the surface of the bath. The Deresh specification teaches that the combination of the two nonionic surfactant has the ability to disperse the three part

defoaming agent throughout the electroplating bath and, in addition, aids in dispersing insoluble brightening agents throughout the plating bath. However, the anti-foaming agent is limited to a bath containing the alkyl sulfonates salts of the tin and/or lead being plated. As stated in Deresh, the composition is unique and their use in lead and tin electroplating baths based on alkane sulfonic acid electrolytes is critical.

The Examiner states:

Deresh discloses that defoaming agents are an advantageous addition to an electroplating composition, as they reduce the foam formation, which can cause non-uniform plating (col. 1, lines 57-63). Therefore, the further addition of a defoamer to the electroplating composition disclosed in Kaylo would be advantageous. Since Dones discloses an excellent defoamer, it would be obvious to include this defoamer in the electroplating composition taught by Kaylo. Applicants respectfully request that the Examiner reconsider her understanding of the teachings of the combination of references.

Clearly, Kaylo does not disclose an electroplating bath as taught by Deresh. Kaylo is directed to an aqueous electrodepositable resin coating and a rinsing system for treating the electrocoated substrates. There is no mention of a foaming problem to be overcome in the electrodepositable coatings bath of Kaylo. Kaylo does not disclose a bath for electroplating a metal. Kaylo discloses a bath for electrodeposition of a resinous film-forming material which forms a curable coating on an electro conductive substrate. The bath does not contain metal ions which are deleterious to the operation of the electrodeposition bath. (Col. 10, lines 59-65; and col. 2, lines 8-10). Since the Kaylo bath contains an electrodepositable epoxy curing resin and does not contain metal ions, it is not similar to or equivalent to the electroplating bath disclosed in the present application and in Deresh.

Clearly, there is no indication in Kaylo that there is any problem with the generation of foam in the electrodeposition bath. Applicants submit that the electrodeposition bath which deposits a resin on the surface of a conducting substrate is far different than the electroplating operation disclosed in Deresh or the present application. Applicants therefore respectfully submit that there would be no incentive to

include in the Kaylo electrodeposition bath an antifoaming agent to correct a problem which apparently is not present. Applicants therefore respectfully submit that the present invention is not obvious over the combination of Kaylo, Dones and Deresh. The need for an antifoaming agent in Kaylo is mere speculation and conjecture on the part of the Examiner and does not provide a basis for a prima facie case of obviousness. Applicants therefore respectfully request that the rejection be reconsidered and withdrawn.

Claim 3 stands rejected under 35 U.S.C. 103(a) as unpatentable over Kaylo in view of Gross (U.S. 6,532,973). Kaylo and Gross, whether alone or in combination neither teach nor suggest the present invention.

Kaylo has been discussed in great detail above and is not related to an electroplating composition or process as set forth in the present application. The electrodeposition of a polymerizable resin is not the same or equivalent to an electroplating bath or process. This is particularly true in view of the disclosure in Kaylo that metal ions should be excluded from the bath.

The Examiner states:

"Discussion of Kaylo as set forth in paragraph 6 is incorporated here by reference where Kaylo discloses an electrodepositable composition of a polyhydric alcohol reacting with an epihalohydrin. However, the polyhydric alcohol is not substituted with a terminal amino or mercapto group."

Applicants respectfully submit that the Examiner is misinterpreting the teachings of Kaylo in regard to the reaction product of a polyhydric alcohol with epihalohydrin. The reaction product referred to by the Examiner is a curable resin (free epoxy groups) and a cross-linking agent which is deposited from the bath onto the surface of an electrically-charged conducting substrate. The reaction product has at least one reactable epoxide group per molecule which is reacted when the deposited coating is heated to cross-link and provide a hard, durable coating. The reaction product of Gross does not contain at least one epoxy group per molecule and is therefore not cross-

linkable.

In contrast to the teachings of Kaylo, the present invention utilizes reaction products of an alcohol with a reactant RX_3 which are epoxide group free. That is, the reaction product useful in the practice of the present invention is not a reactable polymerizable composition as required in the Kaylo reference.

The reaction product useful in the practice of the present invention is the reaction product of epichlorohydrin with an alkoxyated alcohol which can be polyhydric. The alkoxyated alcohol useful in the practice of the present invention can be a polyhydric when R^2 is substituted with an OH group. However, the reaction product of the present invention is free of epoxide groups contrary to the polymerizable reaction product useful as the coating composition in the Kaylo reference which contains at least one free epoxide group per molecule.

In addition, since Kaylo teaches that metal ions should be excluded from the electrodepositable coating bath, one skilled in the art would clearly understand that the Kaylo et al. disclosure could not be related to the electroplating bath in which metal ions are critical to its operation.

In addition, the alkoxyated alcohol useful in the present invention can be capped with a mercapto or an amine group. The reaction product of epichlorohydrin with the alkoxyated alcohol useful in the practice of the present invention is not the same and is not a polymerizable (cross-linkable) coating composition as required in the Kaylo reference since it does not contain at least one epoxide group per molecule.

The Examiner states that it would be obvious to replace the polyhydric alcohol reaction product disclosed by Kaylo by the substituted polyhydric alcohol taught by Gross for the advantages described by Gross. Applicants submit that the Examiner has confused the term "polyhydric alcohol" with the monohydric alkoxyated alcohol useful in the Gross disclosure (see Col. 5, lines 44-46). Applicants therefore respectfully submit that there would be no incentive teaching or suggestion to combine the reaction product disclosed in Gross with the electrodepositable coating composition disclosed in Kaylo.

Applicants submit that substituting the reaction product of Gross for the reaction product of Kaylo in the Kaylo composition would provide an electrodepositable coating which would be useless since it could not be satisfactorily cross-linked due to its lack of epoxy groups. Applicants respectfully submit that the rejection is based on a false premise and therefore should be reconsidered and withdrawn. Applicants therefore respectfully request that the rejection of claim 3 over the combination of Kaylo with Gross, '973, be reconsidered and withdrawn.

Claim 3 stands rejected under U.S.C. 103(a) as unpatentable over Kaylo in view of Gross, '973, and further in view of Deresh (U.S. 4,849,059). Applicants respectfully submit that Kaylo, Gross '973 and Deresh, whether considered alone or in combination, neither teach nor suggest the present invention.

The Examiner's rejection is based on the premise (which is undisclosed) that the electrodepositable coating composition of Kaylo presents a foaming problem during operation of the process. Applicants submit that there is no mention in Kaylo of any problem with foaming during operation of the process. Applicants therefore respectfully submit that there would appear to be no advantage in introducing a defoaming agent into the Kaylo composition to reduce foaming since it could introduce a potential contaminant into the bath and reduce the smoothness of the film provided to the substrate.

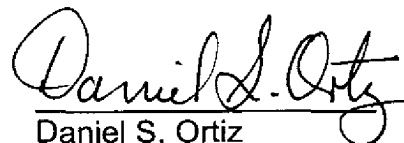
The rejection is also based on the premise or assumption that the epoxide functional polymerizable coating composition utilized in the Kaylo bath is the same or similar to the reaction product of epichlorohydrin with the alkoxylated alcohol useful in the practice of the present invention and the Gross invention. Applicants respectfully submit that as set forth in the present application, in the claims amended and in Gross, the reaction product is not an epoxide functional material. If the reaction product of the present invention is the same as the epoxy group containing resin of Kaylo, there would be no advantage or use to add more of the same product into the electrodeposition bath.

Appl. No.: 10/700,167
Response dated November 13, 2006
Reply to Office Action of September 13, 2006

Deresh discloses a particular defoaming composition which comprises at least 3 and up to 5 critical components. The defoaming agent is particularly useful in a particular plating bath which utilizes alkane sulfonate salts of tin or lead as the plating components. There would be neither teaching nor suggestion that the defoaming agent disclosed in Gross '973 would be useful in the Deresh composition or would be useful to cure the non-existent problem in the Kaylo process. Applicants therefore respectfully submit that the Examiner's rejection is based on a misunderstanding of the teachings of the references and must be reconsidered and withdrawn.

In view of the amendments entered in the claims and the above discussion, Applicants respectfully submit that the application is in condition for allowance and favorable consideration is requested.

Respectfully submitted,

A handwritten signature in cursive script, reading "Daniel S. Ortiz". The signature is written in dark ink and is positioned above the printed name and contact information.

Daniel S. Ortiz
(Reg. No. 25,123)
Attorney For Applicant(s)
215-628-1141

Cognis Corporation
Patent Department
300 Brookside Avenue
Ambler, PA 19002

DSO/mc ORTIZ\U0132-116am.doc